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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Y. AKIBA et al
Serial No.: 09/956,909
Filed: September 21, 2001
For: LOW-EMI ELECTRONIC APPARATUS, LOW-EMI CIRCUIT BOARD, AND METHOD OF MANUFACTURING THE LOW-EMI CIRCUIT BOARD
Group: 2841
Examiner: J. VIGUSHIN

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TC 2001 DEPT. 3004
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PRELIMINARY AMENDMENT

Assistant Commissioner for Patents December 13, 2001
Washington, D.C. 20231

Sir:

The following amendments and remarks are respectfully submitted in connection with the above-identified application.

IN THE CLAIMS:

Please insert additional claim 16 as follows:

16. A circuit board comprising a first conductor layer, a second conductor layer, a third conductor layer, a first dielectric material layer, a second dielectric material layer and a resistor layer, wherein:

A'

A' Cornd

said second conductor layer and said resistor layer are sandwiched between said first dielectric material layer and said second dielectric material layer and arranged between said first conductor layer and said third conductor layer;

a metallic material is used as said first, second and third conductor layers, an inorganic or organic material is used as said first and second dielectric material layers and an inorganic material layer is used as said resistor layer in forming a low EMI circuit comprising a capacitor component and a resistor component on the circuit board between said first conductor layer and said third conductor layer and said layers are stacked on the circuit board to form a multi-layer wiring structure;

a wall shape structure made of conductors is formed in a self-closed line shape in an outer periphery of the first and second dielectric material layers on the circuit board or in both the first and second dielectric material layers; and a plurality of conductor layers of different structures are electrically connected through the resistor layer.

IN THE ABSTRACT:

Please **delete** the original abstract and insert as a substitute therefor the amended abstract on the following page.

ABSTRACT

A low-EMI circuit which realizes a high mounting density by converting the potential fluctuation of a power supply layer with respect to a ground layer which occurs on switching an IC device etc., into Joule's heat in the substrate without using any parts as a countermeasure against the EMI. Its structure, a circuit board using it, and a method of manufacturing the circuit board are also disclosed. Parallel plate lines in which the Q-value of the stray capacitance between solid layers viewed from the power supply layer and ground layer is equivalently reduced and which are matchedly terminated by forming a structure in which a resistor (resistor layer) and another ground layer are provided in addition to the power supply layer and the ground layer on a multilayered circuit board. A closed shield structure is also disclosed.

Remarks

Acceptance and entry therefor of this preliminarily submitted amendment prior to the Examiner taking up the above-identified application for a formal review is respectfully requested.

A new, substitute abstract is being submitted which conforms to the 150 word limit for abstracts, as is now required. Acceptance and entry therefor of the substitute abstract is respectfully requested. (A marked-up copy showing the amendment made to the abstract follows the remarks and is entitled, "Marked-up Version Showing Changes Made.")

Newly presented claim 16 corresponds to canceled claim 26 of the allowed prior, parent U.S. Appln. Serial No. 08/860,181. That is, claim 26 in the prior application was canceled for purposes of rendering the prior application allowable. Claim 26 was also indicated, in the prior application, as containing allowable subject matter and that it would be rendered allowable upon obviating the matters raised by the Examiner in connection with the rejection under 35 USC §112, second paragraph thereof. However, since those matters were not completely resolved in the prior application, claim 26 of the prior application, as most recently amended (see the After Final Amendment of May 29, 2001), is now being re-admitted with additional revisions as new claim 16 in this continuation

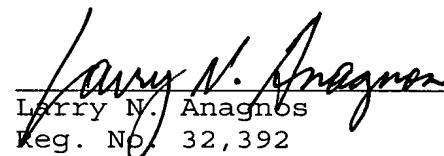
application. That is, as a result of a further review of prior claim 26, additional revisions have been implemented therein which are now included in new claim 16. Namely, a misspelling in the expression "metallic material" was effected and, moreover, additional clarification was implemented in the last sub-paragraph thereof. That is, the expression "... in an outer periphery of the dielectric material layers on the circuit board or in both the first and second dielectric material layer" was revised to "...in an outer periphery of the first and second dielectric material layers on the circuit board or in both the first and second dielectric material layers." It is submitted, the earlier related concern in claim 26, regarding the above expression, has been overcome in view of the further revisions implemented therein in connection with the filing of this newly added claim 16.

Examination as well as favorable action therefor on all of the presently pending claims i.e., claims 1-16, is respectfully requested.

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(500.35516CX1), and please credit any excess fees to such deposit account.

Respectfully submitted,
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